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United States Department of Agriculture,
DEPARTMENT CIRCULAR 88.

Contribution from the Bureau of Biological Survey,
E. W. NELSON, Chief.

ANNUAL REPORT OF THE GOVERNOR OF ALASKA
ON THE ALASKA GAME LAW, 1919.¹

CONTENTS.

	Page.		Page.
Introduction.....	1	Fur-bearing and other animals.....	10
Game estimates.....	3	Wolves and coyotes.....	11
Bears.....	3	Reindeer.....	12
Caribou.....	5	Musk-oxen.....	12
Moose.....	7	Alaska museum.....	13
Sheep.....	8	Wardens.....	13
Deer.....	8	Recommendations.....	14
Goats.....	9	Conclusion.....	15
Ptarmigan and grouse.....	9	Appendix.....	16
Migratory birds.....	9		
Walrus.....	10		

TERRITORY OF ALASKA,
OFFICE OF THE GOVERNOR,
Juneau, November 13, 1919.

SIR: I have the honor to submit herewith my second annual report on the administration of the Alaska game law (act approved May 11, 1908, as subsequently amended) for the fiscal year ended June 30, 1919.¹

Respectfully,

THOMAS RIGGS, Jr., *Governor.*

Hon. D. F. HOUSTON,
Secretary of Agriculture.

INTRODUCTION.

In my report for 1918 I urged the necessity of a revision of the game laws for Alaska and recommended that the control of game be vested in the Territory. I again renew those recommendations and include therein the recommendation that the Territory also be given the jurisdiction over fur-bearing animals, now in the hands of the Bureau of Fisheries of the Department of Commerce. It seems anomalous that two different bureaus of two different departments should exercise supervisory power over two different classes of wild animals, each with its separate warden force reporting to different bureau

¹ The publication of this report by the Department of Agriculture does not carry with it the indorsement by the department of Governor Riggs's views and recommendations.

chiefs.¹ It would be so easy to consolidate the activities of fur wardens with those of game wardens, thereby increasing the efficiency and economy of the service.

I sincerely and honestly believe that if the control of fur-bearing and game animals should be transferred to Alaska under laws to be enacted by the Territorial Legislature wild life would be much better protected and there would not be, on the part of the inhabitants, the present feeling of resentment fostered by existing badly devised game laws. In parts of Alaska we need a freedom of administration not now possible and in others a tightening up on regulations, and a cutting down of limits and arbitrary restrictions. In the districts far removed from transportation, where no fresh domestic meat is procurable, we should have licenses, under certain limitations, to kill male animals at any season of the year. I have in mind at present a certain district of the Kuskokwim occupied by a camp of perhaps 25 men. The small river craft serving this community can not, under any circumstances, handle live cattle or cold-storage beef; nor is it possible to drive in live stock. The governor should be empowered to issue licenses to kill for such camps males of moose, caribou, or sheep in numbers sufficient to meet the pressing needs of the people. The meat provided would serve a useful purpose in assisting in the development of what undoubtedly will eventually become a great mineral and agricultural country. The people served would gladly pay a fair market price for the meat procured, which amount, when collected, could be turned into a fund for protective purposes.

It is quite possible that this proposal will not meet with the approval of conservationists not fully informed as to the needs of a sparsely settled territory, although probably no exception would be taken to the record made by a party of four, hunting near the international boundary, armed with licenses from both the United States and Canada; their "Canadian" sheep were killed about one-quarter of a mile inside Canada from the same herd from which were gathered other sheep included in their United States licenses. I list the game below, with its approximate weight when dressed, the greater part of which could not possibly have been devoted to useful purposes during the 38 days the party was in the wilds; in fact, an article written by one member of the party suggests the abandonment of carcasses, although I am told that a certain amount was cached where it might be picked up by miners:

	Pounds.
8 moose, 900 pounds each.....	7, 200
18 sheep, 150 pounds each.....	2, 700
8 caribou, 200 pounds each.....	1, 600
Total.....	11, 500

Nearly 6 tons of meat, which would have lasted the little camp I speak of, for 8 months! On the one hand, a body of hardy miners, doing useful work, are prohibited from having one of the necessities of life; and on the other, a party of nonresident sportsmen, who have no particular interest in the country, have wasted 6 tons of

¹ In the appropriation bill for the U. S. Department of Agriculture for the fiscal year 1921, is a clause transferring jurisdiction over the land fur-bearing animals of Alaska to the Department of Agriculture, where, under the Bureau of Biological Survey, it will be united with the activities of the department connected with Alaskan game matters, and thus simplify one of the complications mentioned by Gov. Riggs.—EDITOR.

food and are within their rights under Federal law, upon paying into the "miscellaneous receipts of the Treasury" the sum of \$50 for each nonresident member of the party.

It is quite probable that the camp I speak of procured a certain amount of wild meat, and, in fact, a game warden I sent there to investigate made several arrests; the violators of the law pleaded guilty and were fined \$1 each and allowed to retain the meat. If they had pleaded not guilty, no jury would have convicted them. How much better to have a just law, suited to the requirements of the country, than one to which every one is antagonistic.

In my many years of close contact with the people of Alaska, during which time I have been thrown into intimate association with all classes—from the trapper in the hills, living in a manner almost as primitive as the Aleut, to the man of wealth, surrounded by every luxury—I have yet to find any desire to have laws made so lax that there shall be any danger of extermination or even depletion of the game. All agree that there should be stringent laws against the killing of female animals; that in communities served commercially by adequate systems of transportation, there should be strict observance of closed seasons and limits; and that districts in which game depletion is evident should be closed to shooting until the herds are reestablished.

There are, of course, violators of the law in all parts of the country, even in the older settled States, and against these violators we must have adequate protection. Unfortunately for Alaska, the instances of violation of the law, which are always given the greatest publicity, are accepted by ultraconservationists as reflecting the attitude of all Alaskans. Alaskans believe, perhaps erroneously, that Alaska is being reserved and conserved for the benefit of present and future generations of possible visitors to the Territory, and that the needs and desires of a population struggling against every imaginable adverse condition, both natural and artificial, are treated as not worthy of consideration. The unfortunate result is that Alaskans are suspicious of every special law passed by Congress and of every further withdrawal of lands for any purpose, even if announced as only temporary in character. There are "temporary" withdrawals which have been in existence for nearly 14 years. Until laws are enacted which have the support of the majority of the people, there will be all possible evasions.

And so it is with the game laws. Because I am a sworn officer of the law, I am to-day enforcing laws of all kinds with which I have no sympathy, to the best of my ability, although the enforcement is detrimental to the development of the Territory.

GAME ESTIMATES.

The tables submitted under the various headings can not be considered as accurate, but I believe it is the first attempt ever made to compile anything approaching an Alaskan game enumeration. I shall be grateful for corrections and for additional information.

BEARS.

The following table shows the localities in which bears are found, with an estimate of their numbers, as reported by game wardens:

Distribution of bears.

Locality.	Grizzly and brown.	Black.	Grizzly.
Alaska Peninsula.....	500.....	1,000.....	
Kamishak Bay.....	1,000.....		
Kenai Peninsula.....	1,000.....	1,000.....	
North slope Alaska Range.....		Plentiful.....	Plentiful.
Melozitna River.....			Some.
Endicott Range.....		Some.....	Do.
Yukon Valley.....		Plentiful.....	
Kandik River to Black River.....		do.....	Do.
Tanana to Loudon.....		do.....	
Upper Tanana.....		do.....	Do.
Upper Chulitna.....			Plentiful.
White River.....		500.....	500.
Copper River and Chitina.....		Some.....	Plentiful.
Yakutat Bay to Cross Sound.....	Plentiful.....		
Southeastern Alaska, mainland.....		Plentiful.....	
Alexander Archipelago.....	Plentiful.....		

There has been a great deal of confusion existing as to what constitutes a brown bear. The law on the subject is most perplexing and is extremely badly drawn. Last year I stated that I had been reliably informed that the term "brown bear" is intended to signify both the big coast brown bear and the grizzly. Since then I am just as reliably informed that the brown bear and the grizzly bear are absolutely different as to species, and this information seems to be borne out by a study of publications on the subject. I am also told that in framing the law the authors thereof had in mind the protection of the big brown bears of the coast alone, and not the bears of the grizzly family. No matter which contention is right, the law on the subject is a bad one. The destructive bears must go. There is absolutely no use trying to keep a law on the statute books concerning which there is unanimously adverse sentiment. It is at least certain that no conviction can be obtained for the violation of the protective law for bears.

Recently the skin of a grizzly bear killed north of latitude 62° was held at Seattle and a wire sent to me, asking whether such bear came under the provisions of the act. I ruled that a grizzly bear is not a brown bear and needed neither affidavit nor shipping permit. In this contention I was promptly overruled by both the Department of Agriculture and the Department of Commerce, although the court had already ruled as I had. As I am writing this a communication has been laid before me where, under the new ruling, a brown color phase of the black bear has been seized by customs officers on account of shipment without permit. A number of grizzly bear hides are now being held in Juneau, pending the outcome of another suit to be brought in the Federal court to determine their character. The skulls of these bears were sent to Dr. C. Hart Merriam, who classified them as "grizzlies." I have recently been obliged to pay a license on a bear hide which I shipped to Seattle to be tanned and which is to be returned to me in Alaska.

It is contended by sportsmen that brown and grizzly bears seldom attack man. I find that contention can not be sustained. There are comparatively few men in Alaska who live by hunting or trapping who at some time or other have not had awkward experiences with big bears. Within the last month or two, my stenographer, while hunting deer, was attacked from a thicket by a grizzly bear and was only saved by the timely shot of a companion.

This past year the run of salmon has been poor and the streams very low. On some of these streams it is reported to me that practically every salmon ascending the shallow riffles has been thrown out of the water by bears.

Stock raising, an industry for which we have great hopes, can not be carried on in a bear country.

Caches of provisions are not safe unless placed on high scaffolds with wide platform overhangs.

We are trying to encourage land development and in certain districts are making slow progress, but destructive bears are a hindrance. A land settler is seldom affluent and has a strange antipathy to the beast which kills his shoats and calves, scatters his stock, and destroys his provisions. I appreciate the sentiment of sportsmen who wish to preserve the species and who desire at some possible future date to enjoy the thrills of a grizzly hunt. I have that feeling myself, but I realize that the benefit to the Territory derived from one homesteader is far greater than that derived from a dozen hunting parties. If the destructive species are to be preserved, sportsmen will find hearty cooperation on the part of Alaskans in stocking the Catskills or Navesinks with brown and grizzly bears, where it is hoped they may be allowed to roam without rousing the hostile sentiments of the inhabitants.

It has been suggested to me that there be established a great bear preserve. Alaska is now suffering from 347 departmental withdrawals and reserves, ranging in area from a few acres to 30,000 square miles, aggregating somewhere in the neighborhood of 75,000 square miles, an area greater than the State of Washington, or all the New England States combined. It is already difficult to know where a person can build a camp fire without being a criminal. Glaciers are covered with forest reserves; there are naval and military reserves, where naval or military posts will never be built; game reserve islands where game never has been and never will be; fish reserves, fox reserves, bird reserves, lighthouse reserves, reserves for the Bureau of Education, water power, oil, coal reserves, reserves reserved and forgotten and then reserved again. Don't let's have a bear reserve, even though it will be easy to get one.

Polar bears are protected by having been overlooked. What are we going to do with them? Perhaps there will be a protective law enacted without provision for enforcement.

Black bears are found practically everywhere on the mainland. They are not protected and are holding their own for the reason that they do little damage.

CARIBOU.

Caribou meat is one of the staples of the interior. With the exception of northwestern and southeastern Alaska, caribou are more widely distributed than any other of the purely food animals. In addition to the great migratory herds, caribou are found singly and in bands of varying sizes from the Pacific to the Arctic. In many isolated districts, particularly in the far north, caribou is the only fresh meat procured from one end of the year to the other.

There are probably three great migratory herds and a number of moderate-sized ones. It would be a matter of great scientific interest if some bureau of the Government or scientific society could arrange an expedition to study these interesting animals. The great herds

split in their migrations, but seem to gather pretty well at some period of their run. I have been endeavoring to obtain definite data on the migrations from game wardens, trappers, and others, but am not at all satisfied with the collation submitted. Very few of my correspondents make the same deduction, and their theories vary widely. For the sake of identification, I have arbitrarily named the herds—

Northern herd.—Approximately 60,000 in number; route of migration from the Mackenzie River westward to the headwaters of the Canning River. A split is made at the head of the Old Crow River, and about 5,000 follow the ridges south near the international boundary, nearly to the Porcupine River. A further split occurs on the divide between the Colleen and Sheenjek Rivers. The herds of caribou reported along the Endicott Range may be this same herd, but I think the probabilities are against it. The return migration in spring follows practically the same route. The northern herd is in greater danger of extermination than any other, as it is extensively and wantonly hunted by the natives on both sides of the boundary. In places, miles of fence are found, in some instances terminating on cliffs, where bands of caribou have been driven to destruction. A game warden should be provided to keep in touch with this herd.

International herd.—Approximately 300,000 in number; route of migration from the territory between the Peel and Porcupine Rivers in a southwesterly direction; one part, numbering about 100,000, breaks off at the head of the Kandik River, crosses the Yukon River near Eagle in September or October, moves in a southeasterly direction to the head of the Sixtymile River, and splits again, one part returning to Alaska to the neighborhood of Ladue Creek, the other part splitting into numerous bands, some even penetrating to the White River. Of the original herd, a part turns southeast from near the head of the Tatonduk River and ranges to the McQuesten.

Ketchumstock herd.—Whether what I have always heretofore called the Ketchumstock herd is a part of the International herd, I am unable to definitely state, but in September of this year more than 100,000 of this herd were on the divide between the waters of the Tanana and Yukon. The game warden watched this migration from the 10th to the 18th of September, and states that the movements continued without interruption day and night. One typical band, traveling about 25 abreast, took 35 minutes to pass a certain point. The movement was toward the Goodpaster and Ketchumstock countries. I believe this to be a separate herd, but can not positively identify it as such. It was noted by the wardens that many of the cows were followed by two calves and that there were also numerous wolves following the herd. The return seems to be in June. This past year the return route closely followed part of the Valdez-Fairbanks trail. A camp of road builders was obliged to move its location, as it was constantly being overrun. At Paxsons the wife of the roadhouse keeper found her little girls one day in front of the roadhouse surrounded by caribou and petting the calves.

Alaska Peninsula herd.—About 3,000 in number; migration from Becharof Lake to the end of the Peninsula. This herd does not leave the peninsula.

Kuskokwim herd.—About 4,000 in number; migration not known, except that the herd moves south in spring and north in autumn.

Nonmigratory herds—

Northern side of Alaska Range, near Mount McKinley	25,000
Northern side of Nutzotin Mountains	2,000
Fortymile River	1,000
Tozitna River	1,000
Tolovana River	500
Colville River (number unknown).	
Kobuk River (number unknown).	
Kandik River (number unknown).	

A total in the Territory of possibly 300,000 or more caribou.

From all reports received, I judge that the International and Ketchumstock herds are increasing; that the Northern herd is decreasing; while there is little change in the Alaska Peninsula and Kuskokwim herds.

I have noted only those localities where caribou are known to be in numbers; as stated before, caribou are very widely distributed.

The greatest menaces to the caribou are uncontrolled killing by natives and certain whites, by wolves, and by disease. In connection with the last menace, a veterinarian tells me that he is confident that fully one-third of all caribou are afflicted with tuberculosis. I have myself found lesions in caribou meat as described by him.

MOOSE.

Moose, the largest of all food game animals, are found in practically all of the lowlands south of latitude 68° and even north of this latitude in certain valleys. It is almost impossible to submit any definite estimates of their numbers or of their ranges, as moose are not only very wary, keeping well out of sight, but do not travel in bands of any considerable numbers like caribou or sheep. The best-known ranges are on the Kenai Peninsula and north of the Alaska Range in the vicinity of Lake Minchumina. On the Kenai Peninsula they are hemmed in and can not roam far from their range.

Distribution of moose.

Locality.	Approximate number.	Remarks.
Fortymile District	1,000	Increasing.
Upper Tanana River	Plentiful	Do.
Lake Minchumina	1,500	Breeding ground; decreasing on account of wolves, disease, and unlawful killing.
Forks of Kuskokwim River	Plentiful	Breeding ground.
Lower Kuskokwim River	Some	
Nenana River to Delta River	500	Increasing.
Kenai Peninsula	4,000	Do.
Yentna River	500	Do.
Koyukuk River	Plentiful	Do.
Porcupine River	Some	
Yukon River to Porcupine River	do	Do.
Upper Noatak and Kobuk Rivers	do	
Yukon Valley, boundary to Holy Cross	do	In certain districts of Yukon, plentiful.
Ladue Creek to White River	do	One estimate, 20,000; another, 50,000.
Taku River	100	Canadian moose.

The former winter range, near the shores of Cook Inlet, is rapidly being settled, and the moose are kept farther back in the hills, where many die from starvation in the heavy snows. On the Kuskokwim

many are reported to have died of a disease in which the horns grow no larger than a man's hands, the skin is poor, and there is a running from the nose. Lake Minchumina is one of the greatest breeding grounds for the moose of the interior, but every year reports come to me of the death by drowning of many calves. I have even been asked to have fences built in certain localities to keep cows with calves from dangerous morasses.

In most of the districts moose are reported as being more plentiful.

SHEEP.

The most interesting and beautiful of all the game animals of Alaska are the arctic sheep (*Ovis dalli*). They are found in practically all of the mountainous regions of the Territory north of the coastal ranges. Sheep are easily hunted and easily exterminated. They differ from other game animals in that a band will not leave its range when extensively hunted, but remains in its home district until killed off. While sheep are widely distributed, there are certain localities where they are particularly in evidence.

The following table shows the principal known ranges and estimated numbers:

Distribution of sheep.

Locality.	Approximate number.	Remarks.
British Mountains.....	Scattered.....	Largely killed off by natives and whalers. Reported by trappers to be very plentiful. Small bands of 5 to 20 encountered in all the hills between Yukon and Porcupine, mostly Fannin sheep (<i>Ovis fannini</i>).
Endicott Range.....	Plentiful.....	
Kandik River.....	Some.....	
Mount McKinley National Park and vicinity.	10,000.....	Of these about 2,500 range on both sides of the boundary. Estimated from incomplete count.
Nenana River and vicinity.....	3,000.....	
Nutzotin Mountains.....	10,000.....	
Wrangell Mountains, including White River.	15,000.....	
Kenai Peninsula.....	3,700.....	
Chitina River.....	1,000.....	Hunted very seldom, owing to inaccessibility.
South side Mount Natazhat and Klutlan Glacier.	3,000.....	

It is regrettable that we have not more information concerning the sheep ranges on the mountains bordering on the Arctic.

It is reported to me that a disease locally known as "lumpy jaw" is affecting large numbers of sheep in the Mount McKinley district.

DEER.

I am not at all pleased with the condition of the deer in southeastern Alaska. The winters of 1915, 1916, and 1917 were extremely severe, and many deer perished from starvation or, while in a weakened state, fell an easy prey to wolves, which are greatly increasing on some of the islands. As great a menace almost as wolves are the numerous wild dogs, the offspring of abandoned Indian dogs. We must have more wardens for the patrol of the islands of the Alexander Archipelago, to control the illegal killing of deer by the crews of logging camps, canneries, and fishing boats. This illegal killing of deer affects principally the does and fawns, which are more often found on the beaches than the bucks. On Admiralty and Chichagof Islands, where formerly deer were encountered at every turn, sportsmen now advise

me that they must hunt very hard before success is obtained. From some of the islands in the southern part of the Archipelago come reports that deer are slightly on the increase, but are in no wise as plentiful as prior to 1915.

The export of any part of a deer is prohibited by law. As a result the hides of deer legally killed are going to waste. The law should be modified so as to allow export of articles manufactured by Indians from deer hides and of hides of animals shown to have been legally killed. The price of hides is not a sufficient inducement for the killing of deer alone, and Indians should be encouraged in every industry, particularly as Alaskan natives receive no assistance from the Government.

GOATS.

Little reliable information concerning goats can be obtained. Their range is from Kenai Peninsula to Dixon Entrance. The warden stationed at Chitina considers that they are decreasing in this district, the only considerable number being found on Goat Mountain, near the Nizina Glacier, and on the mountains along the Bremner River. In these districts their number is estimated at 3,000. From Yakutat Bay to Mount Fairweather goats seem to be holding their own, while in southeastern Alaska they are reported as being on the increase. Goats may be seen in numbers at Sumdum, Snettisham, and other inlets of the mainland.

PTARMIGAN AND GROUSE.

In my report for last year I mentioned the great scarcity of ptarmigan and grouse. For some unknown cause they practically disappeared from all over the Territory. This year they are reappearing in increasing numbers, and indications are that another nesting season will fully reestablish the former numbers. It is interesting to note that the periodic dying off of rabbits through disease was coincident with the disappearance of these game birds, and that rabbits are now also on the increase.

MIGRATORY BIRDS.

The migratory-bird treaty act is the most excellent instrument ever put into operation for the protection of migratory birds. However, it was conceived without sufficient information regarding the interior of Alaska or the Yukon Territory. I drew attention to its defects in my report of last year and was promised assistance in having the treaty modified as applied to the far north. If any steps have been taken, I have not been advised thereof. Alaska and the Yukon Territory are the great breeding grounds of waterfowl for the Pacific coast, and yet the inhabitants of these countries have only a fraction of the shooting season allowed to sportsmen farther south. I have discussed the question with sportsmen, among whom were some partly responsible for the treaty, and they agree with me that we should have an open season commencing August 15 in the interior of Alaska and the Yukon instead of September 1, as by October 1 practically all ducks have left the inland waters. By August 15 all ducks are well grown and short flights have already started. Even though a sportsman does reside in Alaska, he should not be penalized therefor.

With the migratory-bird treaty act in operation all the various bird reserves should be eliminated. Under the law spring shooting is wisely prohibited. The bird reserves were primarily created to preserve certain well-known nesting grounds, as the Yukon Delta Reservation of approximately 20,000 square miles, which was set aside principally for the protection of the beautiful emperor goose, nesting in one part thereof. Now that the game laws, if enforced, will protect all nesting grounds, there is no reason for continuing these withdrawals, especially as the birds are absent therefrom the greater part of the year.

Waterfowl are reported to be on the increase at all the nesting grounds. I have received a mass of information concerning nesting grounds which I hope to compile in the future, a work to which I can not at present devote the necessary time. It should be of interest to the sportsman-naturalist.

The Chief of the Bureau of Biological Survey hopes to be able to detail wardens to some of the nesting grounds this year. I sincerely trust that funds may be made available for this important purpose, as the natives, in particular, at times cause a great deal of wanton destruction of eggs and fledglings. The men detailed for this patrol should be instructed how to take notes for scientific information for the use of lovers of bird life. For instance, it is not known where the marbled murrelets nest, although these birds appear in great numbers. More information concerning the emperor goose would be interesting. It is reported to me that its principal nesting grounds are not in the Yukon Delta, but at Shismaref Inlet and the inlets of Kotzebue Sound, and that its flight is much farther extended than at present thought. I have reports of emperor geese being shot at Sitka and at Ketchikan. There is in Alaska a large field for the naturalist-warden.

WALRUS.

Greater numbers of walrus have been observed this past year than for many years. This is probably due to the fact that the rim of Arctic ice along which walrus are usually found was late in receding. Walrus are reported in Bering Sea as far south as the rim of winter ice, about latitude 60°. There is no definite information as to numbers, although there is a reported record of 1,100 having been taken by one hunting party.

Without having made any particular study of the question, I am inclined to recommend that walrus killing be confined to natives, for whom they furnish ivory, oil, and leather.

FUR-BEARING AND OTHER ANIMALS.

Fur-bearing animals are not classed as game animals, but they should be. It is hard to understand why black and polar bears should be fur-bearing animals, and brown bears game animals. Martens, minks, foxes, beavers, weasels, etc., are classed as fur-bearing animals. They are hunted and killed during open seasons, as are the game animals, except that the fur bearers are hunted for their pelts and the game animals for food or trophies.

The killing of beavers, martens, and sea otters is prohibited, but the high prices now commanded by all classes of fur offer too great a temptation to be resisted by many trappers, either white or native;

neither are the fur buyers very particular. This past year furs from illegally killed animals, valued at many thousands of dollars, have been seized. I have not the slightest doubt that there are many skins illegally secured, now being held in Alaska against the time when the closed season is removed.

Beavers and martens are increasing in many localities, and killing should be allowed to natives in certain districts. Sea otters, at one time thought to be practically extinct, are occasionally reported around the Aleutian Islands and in Prince William Sound. It would be well to capture a few live specimens and turn them loose on the Pribilof Islands, where they can obtain the protection of the wardens stationed there. When the seal islands were discovered by Pribilof, in 1786, he reported killing over 2,000 sea otters. Hence it would seem that the islands are adapted to their propagation.

Under governmental protection the fur-seal herds are increasing, and commercial killing has recommenced. It is noted by the press that fur-sealskins to the value of \$2,500,000 were exported this year, as well as valuable shipments of blue-fox pelts. Part of the profits from Alaska seals should be devoted to the protection of other fur-bearing and game animals, and to the fishing industry.

Hair seals and sea lions are well distributed, and in places are a menace to the fishing industry. On Norton Sound, Kotzebue Sound, and the Arctic Ocean hair seals and sea lions furnish food, heat, light, footwear, and boat coverings for the Eskimos. The largest sea lion, known by the natives as *Og-o-ruk*, weighs often as much as 1,200 pounds. The smaller sea lions found south of Norton Sound are known as *Lew-tak*. On account of the high cost of leather footwear, thousands of pairs of moccasins and mukluks made from hair seals and sea lions are being shipped to the States, where they take the place of slippers. Moccasins and mukluks are much more comfortable than slippers and there is no good reason why a native industry therein should not be built up.

My attention has been drawn on numerous occasions to the illegal poisoning of foxes and other fur bearers. Poisoning in the Chitina and Chisana countries seems to be particularly flagrant. This practice should be stopped, else the fur bearers will be exterminated. The game warden stationed at Chitina recommends that each pelt be marked with the name of the trapper so that suspected pelts can be examined for traces of poison, and the transgressor punished.

Along the boundary many furs illegally secured are being exported through the nearest Canadian trading post. Furs so handled are known as "naturalized" furs. I have brought this practice to the notice of the proper authorities, with the suggestion that steps be taken with Canadian officials to discourage the traffic. Fur-bearing animals would receive much better protection from the Territory than they now receive from the Federal Government.

WOLVES AND COYOTES.

Wolves are commencing to appear in unprecedented numbers and are becoming a great menace to game. Coyotes are increasing along the White River and at the head of the Chitina. Both are following the caribou and moose and harrying the sheep. I dread the coyote

more than the wolf. Coyotes have gradually worked their way up from British Columbia and if allowed to become established they will cause more damage among game herds than almost any other agency. Wolves are increasing, probably on account of the withdrawal of trappers from certain districts, due to restrictions on the taking of certain fur-bearing animals. Packs of wolves, numbering as many as a hundred, are following the migratory herds and at times stampeding them from their runs. In the Eagle country they have pulled down even grown cow moose. In the vicinity of the Black River, north of the Yukon, wolves are extremely bold, showing little fear even of men. There are wolves in varying numbers the entire length of the Yukon River. They are reported in numbers on the Ambler River, a tributary of the Kobuk River. In southeastern Alaska, they are found on the islands at the lower end of the Archipelago; Prince of Wales and Kupreanof Islands in particular are reported to be overrun by wolves, with great resultant loss of deer.

The Territory provides a bounty of \$15 for each wolf killed, but this in itself is not sufficient to make wolf hunting an object, as the animals are exceedingly wary and difficult to trap. A bill was introduced in the last legislature to employ certain designated persons as vermin killers and to authorize such persons to use poison. The bill failed of passage, as attention was drawn to the Federal prohibition of the use of poison.

The Government has performed a great deal of useful work in vermin extermination in the States. It is hoped that these activities will be extended to Alaska.

REINDEER.

I have made a full report on reindeer to the Secretary of the Interior. Reindeer meat is becoming an economic factor in the Territory, but the industry is just now in rather an awkward predicament. Shipments are being made from Nome to the limit of cold-storage facilities, leaving a surplus of steers which can not be marketed, but which are not yet numerous enough to warrant the placing of cold-storage boats on the run. In a few years, however, reindeer meat will be a familiar article of diet throughout the States. When the reindeer industry is allowed to expand and herds become scattered throughout the Territory, the necessity now existing for the use of wild meat will be greatly reduced.

MUSK-OXEN.

In my report for 1918 I drew attention to the desirability of reestablishing musk-oxen in northern Alaska. An appropriation should be procured for the purpose. With the cattle ranges of the States becoming restricted, every effort should be made to utilize all available grazing grounds, especially when such grazing grounds are not suited to other varieties of stock. For the benefit of those interested who have not seen the previous report, I quote the following therefrom:

It is now proposed, if the consent of the Canadian Government is secured, that Congress be interested in the scheme of importing a herd of musk-oxen from Coronation Gulf or Melville Island for breeding them for the benefit of native or white settlers. An industry of the greatest future value to the United States is foreseen, and lands now wild wastes will become a national asset.

I am indebted to Mr. Stefansson for the information concerning musk-oxen. Mr. Stefansson has observed them through a number of years of Arctic explorations, and is in a position to speak more authoritatively than almost any other person. He suggests that a ship be sent to Melville Island during one summer, winter there, and return the following summer, landing the catch of musk-oxen at any selected point along the Arctic coast.

Musk-oxen undoubtedly can easily become domesticated, and, being indigenous to the north, no experiments in the matter of food or range are necessary. As an article of food the flesh closely resembles beef, large bulls weighing approximately from 600 to 700 pounds. The long, shaggy guard hairs of the coat cover a soft, long-fibered wool, which woolen-goods manufacturers have stated is equal, if not superior, to the finest domestic sheep wool and of about twice the quantity found on the best sheep. Musk-oxen have none of the roving instincts of cattle, their ordinary drift being not more than 5 miles per month, nor can they be easily stampeded by attacks of man or beast. When attacked, the adult members of the herd quickly collect in a circle around the young and present a formidable front to the foe. Occasionally a bull will charge from the herd for a few yards and then retire quickly to his place in the phalanx. They are not aggressive except when directly attacked, but so sure is their defense that wolves, the principal enemy of game in the north, are ordinarily impotent against them. Milk is yielded in about half the quantity given by the average domestic cow, but it is richer, and the taste is practically the same.

Here is an animal which seems by nature to be designed to make a productive country out of barrens now serving no purpose. In the musk-ox are combined all the qualities most to be desired by a pioneer population of a desolate region. The northern portion of Alaska can never serve a better purpose than in becoming the grazing land of vast herds of reindeer and musk-oxen, and when so utilized will in time become one of the great sources of meat supply for the United States.

ALASKA MUSEUM.

There is now in the process of formation a society in Alaska the aim of which will be to perpetuate within the Territory all matters of historic and geographic interest. I am assured of a membership of about 1,000. In its proposed museum there should be a division of natural history, with mounted groups of the fauna of Alaska. I can think of no more graceful act on the part of sportsmen, who, after paying a \$50-license fee into the United States Treasury, or who, hunting under a free permit from the Secretary of Agriculture, have enjoyed all the sport that Alaska has to offer, than to finance such a section. It would be a monument to the sportsmanship of nonresident sportsmen. Alaskan collections are found in museums everywhere except in Alaska. Nothing so arouses a desire to perpetuate wild life as a well-handled display of natural history, and nothing else would show so well to many of the sportsmen who come to this country what they are going to shoot at. This is not a joke, as I have spent many hours explaining how to distinguish a buck goat from a ewe sheep, a grizzly from a brown bear, the color phases of the black bear, and even a moose from a caribou.

WARDENS.

The force of wardens is pitifully inadequate; there are 9 permanent wardens and 1 special native warden to patrol 590,000 square miles of country—an area nearly equal to the total area of all the States east of the Mississippi River. The State of New York, even with its limited game districts, has a warden force of nearly 150. A warden is stationed at each of the following places: Juneau, Ketchikan, Sitka, Nome, Seward, Anchorage, Fairbanks, Chitina, Nenana, and Eagle. For the pay and travel expenses of these wardens there is annually appropriated the sum of \$20,000. This amount is absolutely inadequate. Travel in Alaska is a greater item of expense than salary. It is impossible to keep the wardens in the field, as they should be kept.

In addition to the warden stations mentioned above, we urgently need wardens in the following sections:

Southeastern Alaska.....	2
Upper Tanana River.....	1
Matanuska Valley.....	1
Fort Yukon.....	1
Upper Porcupine River, near international boundary.....	1
Koyukuk River.....	1
Chandalar River.....	1
Mount McKinley National Park.....	1
Upper Kuskokwim River.....	1
Lower Kuskokwim River.....	1
Alaska Peninsula.....	1
White River.....	1
Total.....	13

Wardens at the foregoing places are an absolute necessity if game is to be properly protected. I have put in estimates through the Department of the Interior for about half this number, as there seemed little possibility of procuring the full number desired. I am advocating a constabulary for Alaska, which, if granted, will obviate the necessity for any wardens, as such a body will exercise all police authority.

RECOMMENDATIONS.

When it comes to the matter of making recommendations I become discouraged. Almost every governor since there have been governors and game laws in Alaska has recommended that the laws be revised, but unthinking opposition, formed without proper investigation, has blocked progressive legislation.

My first recommendation is to turn the control of all game and fur-bearing animals, with the exception of fur seals, to the Territory. Undoubtedly this is the wisest course, and game will then be much better protected; but if it is thought that the people of Alaska have not the same degree of intelligence as is possessed by other people 4,000 miles away, whose most intimate knowledge of the Territory is derived from viewing a picture post card of a polar bear perched on an iceberg, then let some such law as the following be enacted:

SECTION 1. The control of all game animals, birds, and land fur-bearing animals in Alaska is hereby vested in a game commission for the Territory of Alaska, to consist of the governor, the secretary, who shall both serve without pay, and four commissioners, to be appointed by the Secretary of Agriculture, one from each of the four judicial divisions of the Territory, who shall receive an annual salary of \$500 and actual or per diem travel expenses when on official business. Such commissioners may be Federal officials, if the Secretary of Agriculture so elects, and may receive such additional salary for the extra service performed.

SEC. 2. The commission hereby created shall issue such regulations for the protection and use of game animals, game birds, and land fur-bearing animals as may seem best, which shall have the effect of law. There shall be a quorum of the commission to transact business, and any proposed regulations must receive the vote of the majority of the commission before becoming effective: *Provided*, That existing game laws shall be effective until 60 days after their repeal by the commission.

SEC. 3. All officials of the United States in Alaska are instructed to assist in the execution of all the regulations of such game commission.

SEC. 4. All receipts from permits, licenses, etc., sale of confiscated animals or parts thereof, and from fines imposed by the courts, shall be covered into a game fund hereby created and shall be immediately available for expenditure by the commission without further appropriation.

SEC. 5. To carry out the purpose of this act, there is hereby appropriated the sum of \$100,000 to be expended under the direction of the game commission.

The commission form of game regulation seems to work out very well in British Columbia, even though that Province, too, is nearly as far from the Atlantic as is Alaska.

By placing game control in the hands of a commission, special regulations can be enacted as need arises; the Territory can be districted with each district described by men familiar with its geographical features; cooperative regulations with the authorities of British Columbia and the Yukon Territory can be entered into without treaty negotiations; and, with a liberal initial appropriation, supplemented by receipts from other sources, a systematic warden service will replace the present inadequate patrol, which at best is not much more than a threat to the violators of the law.

CONCLUSION.

In conclusion I wish to voice my appreciation of the helpfulness of the sportsmen who have visited and know Alaska, of the earnest officials of the Bureau of Biological Survey, and of other lovers of wild life both in and outside of Alaska. We are all working toward the same goal, perhaps by different paths. Boiled down, I find we differ principally on the question of psychology. The Alaskan, harassed and impeded in industry at every turn by badly conceived and badly executed laws and regulations, resents further laws and regulations in the making of which he is allowed no voice. He feels that he is entitled to the same privileges of citizenship heretofore granted to residents of States and other Territories. In the interest of good American government, I believe that this spirit should be recognized and conciliation and cooperation offered, instead of arousing an immediate antagonism by presenting mandates calling for unquestioning and unthinking obedience. It is only right and just.

APPENDIX.

TABLE I.—*Hunting licenses issued during the fiscal year ended June 30, 1919.*

No.	Date issued.	Citizen of—	Fee.
34	July 1, 1918	United States.....	\$50
35	Aug. 3, 1918	do.....	50
36	Sept. 19, 1918	Straits Settlements.....	100
37	Apr. 21, 1918	United States.....	50
38	May 10, 1918	do.....	50
39	May 23, 1919	do.....	50
40	do.....	do.....	50
41	June 23, 1919	do.....	50
Total.....			450

TABLE II.—*Special moose-shipping licenses issued during the fiscal year ended June 30, 1919.*

No.	Date issued.	Citizen of—	Fee.
16	Nov. 7, 1918	Straits Settlements.....	\$150
17	do.....	do.....	150
Total.....			300

TABLE III.—*General game-shipping licenses issued during the fiscal year ended June 30, 1919.*

No.	Date issued.	Game or trophy.	Fee.
92	July 1, 1918	1 brown bear skin.....	\$5
93	July 12, 1918	do.....	5
94	July 16, 1918	do.....	5
95	July 17, 1918	1 moose (killed north of 62°).....	40
96	July 25, 1918	do.....	40
97	July 31, 1918	1 brown bear skin.....	5
98	Aug. 3, 1918	do.....	5
99	Aug. 7, 1918	do.....	5
100	Aug. 8, 1918	do.....	5
101	Aug. 9, 1918	1 caribou head.....	10
102	do.....	1 brown bear skin.....	5
103	do.....	do.....	5
104	do.....	do.....	5
105	Aug. 22, 1918	do.....	5
106	Aug. 29, 1918	do.....	5
107	Sept. 3, 1918	do.....	5
108	do.....	do.....	5
109	do.....	do.....	5
110	do.....	do.....	5
111	Sept. 5, 1918	do.....	5
112	Sept. 8, 1918	do.....	5
113	do.....	do.....	5
114	do.....	do.....	5
115	Sept. 10, 1918	do.....	5
116	Sept. 11, 1918	do.....	5
117	do.....	do.....	5
118	Sept. 22, 1918	do.....	5
119	Oct. 1, 1918	do.....	5
120	Oet. 7, 1918	do.....	5
121	do.....	do.....	5
122	do.....	do.....	5
123	Oet. 8, 1918	do.....	5
124	do.....	do.....	5
125	do.....	do.....	5

TABLE III.—General game-shipping licenses issued during the fiscal year ended June 30, 1919—Continued.

No.	Date issued.	Game or trophy.	Fee.
126	Oct. 8, 1918	1 brown bear skin.....	\$5
127	do.....	1 mountain goat.....	5
128	do.....	1 mountain sheep.....	10
129	do.....	do.....	10
130	do.....	1 brown bear skin.....	5
131	Oct. 9, 1918	do.....	5
132	Oct. 14, 1918	do.....	5
133		Canceled.....	
134	Nov. 4, 1918	1 caribou head.....	10
135	Nov. 11, 1918	1 brown bear skin.....	5
136	Nov. 30, 1918	do.....	5
137	Nov. 16, 1918	do.....	5
138	do.....	do.....	5
139	do.....	do.....	5
140	do.....	do.....	5
141	do.....	do.....	5
142	do.....	do.....	5
143	Nov. 20, 1918	do.....	5
144	Dec. 3, 1918	do.....	5
145	Dec. 4, 1918	1 mountain sheep.....	10
146	do.....	do.....	10
147	Dec. 12, 1918	1 brown bear skin.....	5
148	Dec. 17, 1918	do.....	5
149	Dec. 24, 1918	do.....	5
150	Jan. 15, 1919	do.....	5
151	Feb. 6, 1919	do.....	5
152	do.....	do.....	5
153	Feb. 24, 1919	do.....	5
154	Mar. 19, 1919	1 caribou head.....	10
155	do.....	1 brown bear skin.....	5
156	Apr. 12, 1919	1 mountain sheep.....	10
157	Apr. 21, 1919	1 brown bear skin.....	5
158	do.....	do.....	5
159	do.....	do.....	5
160	do.....	do.....	5
161	May 1, 1919	do.....	5
162	do.....	do.....	5
163	May 13, 1919	do.....	5
164	do.....	do.....	5
165	May 20, 1919	do.....	5
166	June 5, 1919	1 caribou head.....	10
167	do.....	do.....	10
168	June 7, 1919	1 brown bear skin.....	5
169	June 12, 1919	do.....	5
170	June 23, 1919	do.....	5
171	do.....	do.....	5
172	June 25, 1919	do.....	5
Total.....			520

TABLE IV.—*Game or trophies shipped from Alaska for private use during the fiscal year ended June 30, 1919.*

No.	Date of ship- ment.	Kind and number of game or trophies.	Residence of shipper.
HUNTING LICENSES.			
36	Nov. 17	3 mountain sheep heads and capes.....	Straits Settlements.
SPECIAL MOOSE-SHIPPING LICENSES.			
16	Nov. 17	1 moose head and cape.....	Straits Settlements.
17	...do....	....do.....	Do.
GENERAL GAME-SHIPPING LICENSES.			
....	July 11	1 caribou head and cape.....	United States.
....	...do....	1 sheep head and cape.....	Do.
....	July 15	1 brown bear skin.....	Do.
94	July 18	....do.....	Do.
....	...do....	....do.....	Do.
195	July 30	1 moose head.....	Do.
91	Aug. 18	1 brown bear skin.....	Do.
....	Aug. 5	....do.....	Do.
99	Aug. 17	....do.....	Do.
101	Sept. 11	....do.....	Do.
102	...do....	1 caribou head.....	Do.
107	Sept. 18	1 brown bear skin.....	Do.
119	Oct. 8	....do.....	Do.
109	Oct. 9	....do.....	Do.
120	Oct. 11	....do.....	Do.
105	Oct. 22	....do.....	Do.
111	...do....	....do.....	Do.
131	Nov. 5	....do.....	Do.
126	Nov. 17	....do.....	Do.
127	...do....	1 mountain goat skin.....	Do.
128	...do....	1 mountain sheep skin.....	Do.
129	...do....	....do.....	Do.
196	Dec. 4	1 crate moose horns and cape.....	Do.
125	Dec. 17	1 brown bear skin.....	Do.
147	...do....	....do.....	Do.
150	Jan. 2	....do.....	Do.
145	Jan. 17	1 mountain sheep head.....	Do.
146	...do....	....do.....	Do.
93	Mar. 19	1 brown bear skin.....	Do.
161	Apr. 18	1 grizzly bear skin.....	Do.
162	...do....	....do.....	Do.
156	Apr. 26	1 mountain sheep head.....	Do.
157	Apr. 27	1 brown bear skin.....	Do.
159	Apr. 26	....do.....	Do.
160	...do....	....do.....	Do.
163	June 6	1 brown bear skin and skull.....	Do.
153	June 9	1 brown bear skin.....	Do.
134	June 17	1 pair caribou horns.....	Do.

¹ Moose trophies taken north of latitude 62°.

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